

Respectfully submitted,

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APPENDIX TO PRELIMINARY AMENDMENT OF OCTOBER 31, 2001

Amendments to the Abstract:

[ABSTRACT]

ABSTRACT OF THE DISCLOSURE

APPARATUS FOR PRESERVING MICROORGANISMS

Subculturing apparatus [(30)] comprises a receptacle for supporting a growth medium [(5)] for culturing of a microorganism. The microorganism is entrained to grow in a predetermined direction, towards an end of the growth medium [(50)], where a further apparatus [(30)] can be placed adjacent thereto. The microorganism can then grow into the growth medium of the further apparatus. The method of storing a microorganism for use in microbiological processes is also described, as is a method of fermentation of a stored microorganism for the production of biochemicals such as pharmaceuticals or agrochemicals.

[(Figure 4)]

Amendments to the Specification:

Page 27, the paragraph beginning on line 6:

Although the embodiment illustrated in Figures 3 to 14 demonstrates how a single receptacle 30 can be connected to another receptacle 30 on a temporary basis to allow for the propagation of a microorganism through growth medium, the invention also

09890855-103101
TOTAL 55806860

contemplates the arrangement illustrated in Figure 15. In that arrangement, a plurality of receptacles 30 of various lengths are connected together by means of collars [56] 54, each receptacle 30 has an insert 40 as previously described and the end receptacles are closed by means of caps 36.

Amendments to the Claims:

1. (Amended) A process for growing an organism, comprising:
providing a first vessel [(30)] containing a first body of growth supporting material [(50)] and causing the organism to grow in said material in said first vessel towards a first location;
providing a second vessel [(30)] containing a second body of growth supporting material [(50)]; and
permitting said organism to grow from the body of material [(50)] in the first vessel [(30)] into the body of material [(50)] in the second vessel [(30)] through said first location.
2. (Amended) A process according to claim 1, comprising connecting said second vessel [(30)] to said first vessel [(30)] and permitting said organism to grow into said second body [(50)] of material while said vessels are connected together.
4. (Amended) A process according to claim 2 [or claim 3], comprising disconnecting said first vessel [(30)] from said second vessel [(30)] after said organism has begun to grow in said second body of material.

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6. (Amended) A process according to [any one of] claim[s] 1 [to 5] wherein said step of causing said organism to grow comprises causing said organism to grow in said first vessel [(30)] and into said second vessel [(30)] in a predetermined growing direction.
7. (Amended) A process according to claim 6 wherein said first and second vessels [(30)] are, in the predetermined direction, of different lengths.
8. (Amended) A process according to claim 7 wherein said second vessel [(30)] is shorter than said first vessel [(30)], said process further comprising [said step of] removing said second vessel, after said step of permitting said organism to grow therein, for sub-sampling thereof.
9. (Amended) A process according to [any one of] claim[s] 1 [to 8], comprising causing said organism to grow in said second body of material [(50)] towards a second location therein, providing a third vessel [(30)] containing a third body of growth supporting material [(50)] and permitting said organism to grow from said second body of material [(50)] into said third body of material [(50)] through said second location.
10. (Amended) A process of storing a microorganism comprising the steps of:
providing a growth medium [(50)];
growing a population of a microorganism on or in the growth medium [(50)]; and

09890855-103101
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sampling said population for subculture[;],

[characterised in that] wherein said step of sampling includes sampling across substantially the whole population of the microorganism.

11. (Amended) A process of storing a microorganism including the steps of:
providing a growth medium [(50)]; and
causing a microorganism to grow on or in the growth medium[;], [characterised in that] wherein said step of causing said organism to grow includes [training] entraining said microorganism substantially in a predetermined direction.

12. (Amended) A process in accordance with claim 11 wherein said step of causing said organism to grow includes causing said organism to grow towards a predetermined location, and said [method] process further comprising sampling at said predetermined location to obtain a sample of said organism across substantially the entire population thereof.

13. (Amended) A process in accordance with claim 12, wherein said sampling step includes the step of placing a sampling medium [(50)] adjacent said predetermined location for continuing growth of said microorganism thereon or therein.

14. (Amended) A process of manufacturing a metabolite comprising the steps of:
storing a microorganism in accordance with the [method] process of [any of claims 1 to 13] claim 11;

extracting a sample of said microorganism;
subjecting said sample to conditions suitable for metabolism; and
extracting metabolite from said sample.

17. (Amended) A storage device [for use in the process of any of claims 1 to 15 including] comprising a housing [(30)], growth medium [(50)] within the housing [(32)], and first and second locations on the growth medium, such that a microorganism can be grown from the first location towards the second location where subculturing of substantially the entire population can be effected.

18. (Amended) A storage device in accordance with claim 17, wherein the housing [(32)] is tubular.

19. (Amended) A storage device in accordance with claim 18, wherein the housing [(32)] is cylindrical.

20. (Amended) A storage device in accordance with [any one of] claim[s] 17 [to 19] wherein the housing [(32)] is of a sterilizable material.

21. A storage device in accordance with [any one of] claim[s] 17 [to 20] wherein said housing [(32)] has formations [(34)] at said first and second locations of the growth medium each formation being suitable to engage with a cooperating formation of another of said storage device [(30)], for propagation of microorganism therebetween.

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22. (Amended) A storage device in accordance with [any one of] claim[s] 17 [to 21] wherein said housing [(32)] comprises means [(40)] for retaining said growth medium.

23. (Amended) A storage device in accordance with claim 22 wherein said retaining means [(40)] has at least one aperture defined therein for passage of microorganism therethrough.

24. (Amended) A storage device in accordance with claim 23 wherein said retaining means [(40)] comprises at least one retaining member [(42')] across said [vessel] retaining means.

25. (Amended) A storage device in accordance with claim 24 wherein said retaining means [(40)] comprises a reticular member [(42)] across said [vessel] retaining means.

26. (Amended) A storage device in accordance with [any one of] claim[s] 17 [to 25] wherein said growth medium [(50)] comprises a natural foodstuff.

28. (Amended) A storage device in accordance with claim 27 wherein said growth medium [(50)] comprises a quantity of a cereal.

29. (Amended) A storage device in accordance with claim 27 [or claim 28] wherein said growth medium [(50)] comprises a quantity of seed.

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30. (Amended) A storage device in accordance with [any one of] claim[s] 27[, 28 or 29] wherein said growth medium [(50)] comprises a quantity of a pulse.

31. (Amended) A storage device in accordance with [any one of] claim[s] 27 [to 30] wherein said growth medium [(50)] comprises an agricultural crop byproduct.

33. (Amended) A storage device in accordance with [any one of] claim[s] 26 [to 32] wherein said growth medium [(50)] comprises at least one of calcium sulphate, soy oil, yeast extract and peptone.

34. (Amended) A storage device in accordance with [any one of] claim[s] 17 [to 33] wherein said growth medium [(50)] is sterile.

35. (Amended) A storage container for use in the storage device [(30)] of [any one of] claim[s] 17 [to 35], defining a cavity within which growth medium can be contained, said container [(32)] comprising first and second access means between which growth medium can extend in use, for growth of an organism between said first and second access means in use.

36. (Amended) A container in accordance with claim 35 including first and second closure means [(30)], removably closing said access means in use.

09890855-103101
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37. (Amended) A storage device [for use in the process of any one of claims 1 to 15] comprising:

growth medium [(50)] for viably supporting a microorganism;

[characterised in that]

wherein said storage device includes a facility for presenting said population substantially in its entirety for subculture.

38. (Amended) A storage device in accordance with claim 37 and further comprising a receptacle [(32)] supporting the growth medium.

40. (Amended) A storage device in accordance with claim 38 [or claim 39], wherein the receptacle [(32)] includes attachment means [(34)] for attachment of said device to further culturing apparatus.

41. (Amended) A storage device in accordance with claim 40, wherein the attachment means [(34)] is operable to engage the growth medium with growth medium of a further storage device [in accordance with any one of claims 37 to 40]

ABSTRACT OF THE DISCLOSUREAPPARATUS FOR PRESERVING MICROORGANISMS

Subculturing apparatus comprises a receptacle for supporting a growth medium for culturing of a microorganism. The microorganism is entrained to grow in a predetermined direction, towards an end of the growth medium, where a further apparatus can be placed adjacent thereto. The microorganism can then grow into the growth medium of the further apparatus. The method of storing a microorganism for use in microbiological processes is also described, as is a method of fermentation of a stored microorganism for the production of biochemicals such as pharmaceuticals or agrochemicals.

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